OFFICE OF MANNED SPACE FLIGHT PROGRAM DIRECTIVE	M-D ML 3200.069 (Project)	DATE MAR 18 1970

SKYLAB
PROGRAM DIRECTIVE NO. 7A

TO : Distribution

FROM: DIRECTOR, SKYLAB PROGRAM

SUBJECT : Establishment of Skylab Program Interface Panel Organization

REF : Intercenter ICD Management Procedure, IMP001, dated April 1969

I. PURPOSE:

This directive establishes the Interface Panel organization to be utilized in the Skylab Program to define and control technical intercenter interfaces and resolve related interface problems.

Specific panels established by this directive are:

A. Mechanical
B. Electrical
C. Instrumentation and Communication
D. Mission Requirements
E. Launch Operation
F. Test Planning
G. Mission Evaluation
H. System Safety*

II. SCOPE

This directive defines the policies and responsibilities, necessary to establish and implement intercenter panel activities. It applies to all program offices engaged in Skylab Program intercenter activities, and specifically to the panels and panel members appointed by those offices. This directive supersedes AAP Directive No. 7, dated September 21, 1967 and cancels AAP Directive No. 8, dated March 12, 1968.

III. POLICY

A. The delegation of project responsibility to more than one center requires the establishment of a formal process to define, coordinate and control intercenter interfaces and to resolve interface related problems. The policies of this formal process are as follows:

1. The panels identified herein will provide the Program Managers with recommended solutions to technical intercenter interface problems.

2. Panel activities are an extension of center program office responsibilities. All activities shall be limited to intercenter interface problems, with due consideration to the existing program office responsibilities.

*The continuation of this panel is under study by the Center Program Managers.

3. Panel recommendations, except as delegated to the co-chairmen by the Program Managers, must be approved by the cognizant Center Program Managers, prior to implementation. Should contractor assistance be required, that direction shall be through the Program Office.

4. Panel disagreements shall be referred to the cognizant Program Managers for resolution. If unresolved at that level, they shall be forwarded to the Program Director for resolution.

5. Panels will function with a chairman or co-chairmen, a secretary or co-secretaries as required by the interface emphasis identified in the charter for the specific panel.

6. Panel membership consists of technical and project specialists from MSF, MSFC, MSC, and KSC. Other NASA centers which have unique mission interfaces may appoint members to the applicable panel.

7. A directory containing panel membership, and organizational information shall be prepared, maintained and issued to all panel members.

IV. RESPONSIBILITIES AND AUTHORITIES

The responsibilities of panels are to identify, resolve and document those technical interfaces that involve coordination of more than one center. The authority of the panels is constrained to the panel charter scopes agreed to by the Program Managers. The panels shall take the action necessary regarding design, analysis, studies, test and operations, within the scopes of their charters, to assure technical compatibility for physical, environmental, functional and procedural intercenter interfaces. Individual responsibilities and authorities are defined as follows:

A. Program Director

1. Establish or abolish intercenter interface panels. This action will be predicated on the recommendations of the Program Managers with the Program Director having the final authority.

2. Be cognizant of the major technical problems of the panels and their impact on programs and schedules, and provide direction in cases where Program Managers cannot agree on the resolution.

3. Resolve major interface problems which may go beyond the scope of the panels and the authority of the Program Manager.

4. Appoint panel members to represent MSF and approve members from NASA centers other than MSFC, MSC and KSC.

5. Publish, distribute and maintain a panel directory.

B. Program Managers

1. The Program Managers of MSFC, MSC and KSC are responsible for taking action to implement this directive.

2. Appoint the chairman or co-chairmen, secretaries or co-secretaries and senior members to the panels and approve the membership that represents his Center. Assure that his Center panel membership is identified to the Program Director for inclusion in the panel directory.

3. Assure that Interface Control Documents (ICDs) are processed per the procedures defined in the reference.

4. Approve, as applicable, the panel charters and charter revisions.

5. Resolve panel disagreements with other Program Managers.

6. Notify the Program Director of major interface decisions and of issues unresolved between Program Offices.

C. Chairman/Co-chairmen

1. Provide the coordination and planning necessary to convene periodic panel meetings.

2. Establish subpanels and ad hoc working groups as required to more effectively accomplish specialized requirements of the panel and assure that they report their activities and recommendations to the panel.

3. Identify interface problems to the Program Managers and recommend solutions to interface problems assigned to them by the Program Managers.

4. Notify their Program Managers when panel agreement cannot be achieved.

5. Identify the requirements for Interface Control Documents (ICDs) and assure that they are developed per the referenced Intercenter ICD Management Procedure.

6. Assure that a center position is developed for all panel inter-center agreements.

7. Request assistance of other panels in resolving problems associated with their charter and coordinate a priority for resolution. Accept and respond to problems related to his charter when received from other panels.

8. Prepare and continuously assess the panel charter, recommending revisions as program development warrants.

D. Secretary/Co-Secretaries

1. Coordinate, prepare and distribute meeting agenda at least two weeks prior to the meetings.

2. Prepare the meeting minutes, obtain chairman or co-chairmen approval and issue the minutes within two weeks after the meeting.

3. Maintain a current status of the completion progress of all panel action items.

V. PANEL SCOPES

A. The panel general scope statements for each currently identified panel are included in the attachment. These scopes are confined by this directive to the identification and resolution of interfaces and interface problems where intercenter hardware and/or responsibilities exist.

B. A general scope requirement applicable to all panels is that of identifying the requirement for ICDs or revisions to ICDs, assuring their preparation, obtaining panel concurrence of their content and submittal to the Program Manager for approval as described in the reference.

C. Substantive changes in panel scope statements, when agreed to by the panel chairman or co-chairmen and senior members, shall be referred to the cognizant Program Managers for approval and submitted to the Program Director for incorporation into this directive.

D. The panel general scope statements provide the mandatory intercenter interface requirements to be performed by the panels. The panel charters will be an expansion of the general scope statements to assure positive recognition and implementation of the requirements.

VI. IMPLEMENTATION

This directive is effective immediately. Center problems arising from implementing these requirements or noncompliance with these requirements, which cannot be resolved by the center Program Managers shall be brought to the immediate attention of the Program Director.

ATTACHMENT

PANEL GENERAL SCOPE STATEMENTS

CONTENT

ABBREVIATIONS

EMI	Electromagnetic Interference
ESE	Electrical Support Equipment
EVA	Extravehicular Activity
CSM	Command and Service Module
GSE	Ground Support Equipment
LV	Launch Vehicle (SIB or SV as applicable)
KSC	Kennedy Space Center
OA	Orbital Assembly (SWS and CSM)
OWS	Orbital Workshop (SIVB)
SL-1	Skylab I (OWS/AM/MDA/ATM)
TM	Telemetry
SV	Space Vehicle (Launch Vehicle and Payload)

MECHANICAL PANEL

1. Define and resolve CSM to LV and CSM to SL-1 interface requirements for mechanical system design compatibility and the functional, physical and procedural interfaces associated with mating and demating, checkout, materials, propellants, fluids, gases, environmental conditioning, alignment, servicing and access.

2. Define and resolve interface requirements for mechanical GSE between the CSM and LV and between the CSM and SL-1.

3. Define and resolve interface problems associated with structural design loads and structural problems as imposed by the LV or SL-1 on the CSM or by the CSM on the LV or SL-1.

4. Define and resolve interface problems associated with preparation of the CSM and SL-1 Thermal and Environmental Control System for crew habitability.

5. Define and resolve problems associated with weights, mass characteristics and mass distribution.

6. Resolve mechanical interface problems for items of flight hardware or experiments developed by one Center and integrated by another.

ELECTRICAL PANEL

1. Define and resolve CSM to LV and CSM to SL-1 interface requirements for electrical system design compatibility and the functional and procedural interfaces associated with mating and demating, check-out, materials, servicing, range safety and equipment access.

2. Define and resolve interface requirements for electrical GSE between the CSM and LV and between the CSM and SL-1.

3. Define and resolve interface problems associated with electrical loads and electrical problems as imposed by the LV or SL-1 on the CSM or by the CSM on the LV or SL-1.

4. Resolve electrical interface problems for items of flight hardware or experiments developed by one Center and integrated by another.

Attachment
General Scope Statement

INSTRUMENTATION AND COMMUNICATION PANEL

1. Define and resolve CSM to LV and CSM to SL-1 interface requirements for instrumentation and communications system design compatibility and the functional and procedural interfaces associated with mating and demating checkout, materials, servicing, command requirements, parameter monitoring requirements and data requirements.

2. Define and resolve problems associated with radio frequencies, frequency allocations and network communications compatibility for the various mission configuration associated with the LV, CSM, SL-1 and OA.

3. Define and resolve interface problems associated with instrumentation and communication equipment which requires crew operation, handling or contact to assure crew compatibility and safety.

4. Assure a compatible space vehicle electromagnetic program including interfaces with ground support equipment, launch facilities and ground stations.

5. Define and resolve interface problems associated with high energy nuclear radiation effects on instrumentation and communications systems operations.

6. Establish overall instrumentation and communications systems compatibility and adequacy to obtain the required data for real time and post-flight performance evaluation.

Attachment
General Scope Statement

MISSION REQUIREMENTS PANEL

1. Assure the development, coordination, and implementation of interface related mission requirements and schedules.

2. Assure the necessary intercenter coordination associated with flight mechanics, flight dynamics, boost trajectory and aerodynamics and range safety and aborts.

3. Assure identification and resolution of all intercenter interface problems associated with mission planning information flow.

4. Coordinate interface related items associated with alternate and contingency mission planning.

5. Assure development and definition of detailed system test and experiment objectives to support mission objectives. Review functional objectives established by MSC operations elements.

6. Coordinate interface problems related to the accomplishment of detailed experiment and system test objectives. Attempt resolution of conflicts between system and experiment objectives.

Attachment
General Scope Statement

LAUNCH OPERATIONS PANEL

1. Assure the operational compatibility of the SV and facilities, including power supplies, GSE, ESE and launching accessories.

2. Define and resolve interfaces on a continuing basis between the SV, GSE, ESE and launch facilities.

Attachment
General Scope Statement

TEST PLANNING PANEL

1. Identify, define, develop and recommend solutions to intercenter test problems by conducting technical and operational trade-offs as necessary.

2. Develop operational plans and define test requirements for tests involving intercenter module level hardware to assure the complete verification of the hardware, including experiments.

3. Identify and define simulator requirements for tests involving intercenter module level hardware, including experiments.

4. Define GSE requirements to support test operations involving intercenter module level hardware, including experiments.

MISSION EVALUATION PANEL

1. Assure that the evaluation reports for the Skylab Program missions are defined and that the responsibilities of the Centers with respect to data analyses and report preparation are defined.

2. Assure the definition and resolution of interface problems between Centers in the evaluation of mission module performance.

3. Define and coordinate flight and ground instrumentation interface problems with respect to the effects on mission performance evaluation, and review all associated requirements documents for adequacy for mission evaluation.

4. Assure the resolution of causes of malfunctions occurring during missions and deviations from planned procedures which appear to have been the result of interface problems.

5. Identify requirements and review implementation procedures for adequate and timely exchange of selected raw and processed data and/or results of analyses required for integrated mission evaluation.

SYSTEM SAFETY PANEL*

1. Assure the definition and control of systems crew interfaces involving crew safety during prelaunch checkout operations and throughout all mission phases from crew ingress to recovery.

2. Identification and reduction or elimination of environmental hazards.

3. Identification and definition of emergency conditions and establish crew reaction plans and procedures to these conditions.

4. Identify crew ground monitoring requirements and the safety action to be taken from the ground during the mission.

5. Identify crew safety requirements.

6. Development of safety/emergency/contingency procedures including emergency egress plans and demonstrations.

7. Review and concur in the design interfaces of the emergency warning system between the CSM and SWS.

*The requirement for and the scope of this panel activities are currently under study by the Program Managers.

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